



Rewarding Learning

General Certificate of Secondary Education

Centre Number

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Candidate Number

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Biology

Unit 1

Foundation Tier



[GBL11]

GBL11

Assessment

TIME

1 hour 15 minutes.

Assessment Level of Control:

Tick the relevant box (✓)

Controlled Conditions	
Other	

INSTRUCTIONS TO CANDIDATES

Write your Centre Number and Candidate Number in the spaces provided at the top of this page.

You must answer the questions in the spaces provided.

Do not write outside the boxed area on each page or on blank pages.

Complete in black ink only. **Do not write with a gel pen.**

Answer **all eleven** questions.

INFORMATION FOR CANDIDATES

The total mark for this paper is **75**.

Figures in brackets printed down the right-hand side of pages indicate the marks awarded to each question or part question.

Quality of written communication will be assessed in Question **4**.



1 The table gives some information about food tests.

Complete the four boxes in the table.

Food sample	Reagent	Colour of reagent before the food test	Colour of reagent after the food test
starch		yellow-brown	blue-black
	Benedict's		brick red
protein	Biuret	blue	

[4]



2 Complete the sentences which describe how plants make their own food.

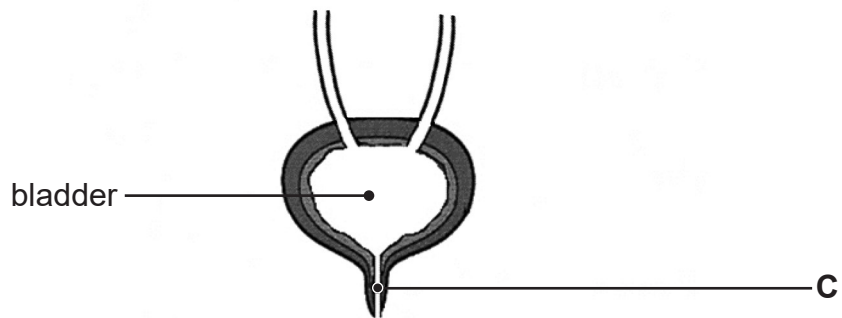
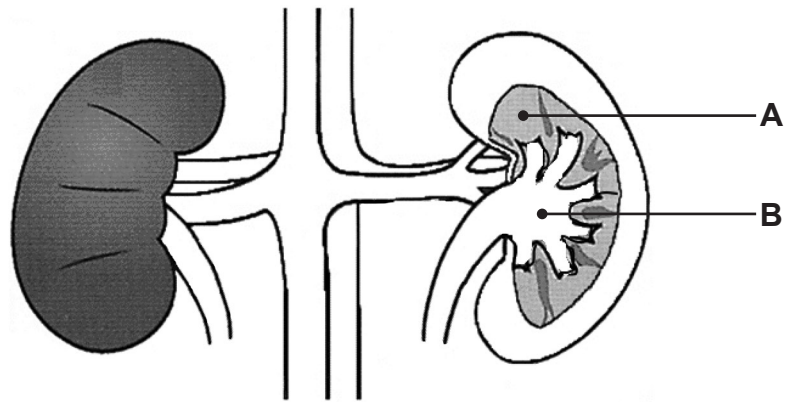
- Plants make their own food during the process of _____ .
- During this process, the gas _____ is used and the gas _____ is produced.
- The _____ energy needed for this process is trapped for the plant by the pigment _____ .
- Some of the glucose made by the plant is stored as insoluble _____ .

[6]

[Turn over



3 (a) The diagram shows part of the excretory system.



Source: © CCEA

Look at the diagram.

(i) On the diagram, complete the tubes which carry urine to the bladder. [1]

(ii) Name these tubes.

[1]



(b) Name parts **A**, **B** and **C**.

A _____

B _____

C _____

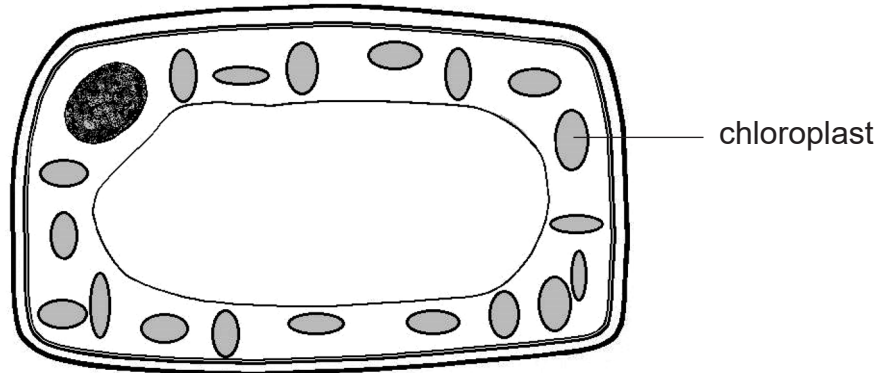
[3]



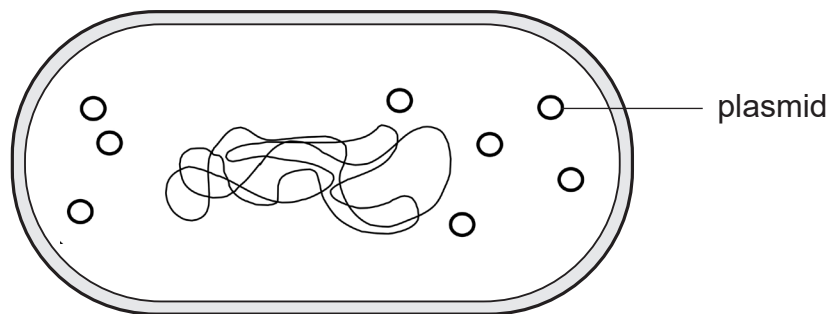
4 The diagrams show the structure of a plant cell and a bacteria cell.

The diagrams are not drawn to the same scale.

plant cell



bacteria cell



Source: Chief Examiner



5 (a) What is an enzyme?

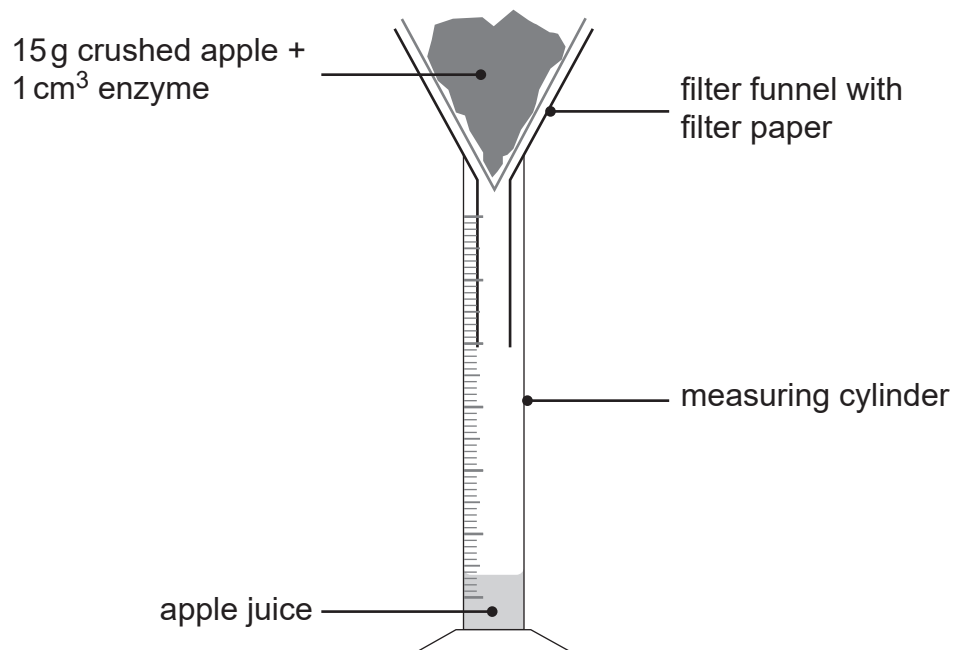
[2]

(b) Students crushed apples to release juice from the apple cells.

They added an enzyme to break down a substance called pectin in the cell walls, so that more juice could be released.

The students carried out an experiment to compare the effect of two different enzymes, **A** and **B**, on the volume of apple juice released from the crushed apple cells.

The diagram shows their experiment.



Source: Principal Examiner



- (c) In the commercial production of apple juice, enzyme **B** is added to crushed apples in large tanks.

The photograph shows the large tanks used.



Source: © Philippe Psaila / Science Photo Library

- (i) Suggest why enzyme **B** is used rather than enzyme **A**.

[1]

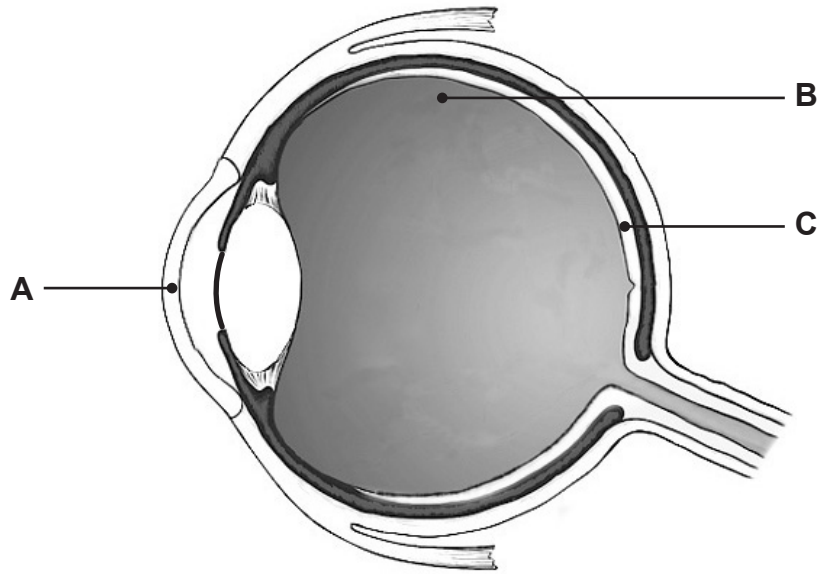
It is important that the temperature inside the tanks is controlled.

- (ii) Explain why.

[2]



6 The diagram shows a section of an eye.



Source: © Getty Images

Look at the diagram.

Name parts **A**, **B** and **C** and give their functions.

Part **A** _____

Function _____

Part **B** _____

Function _____

Part **C** _____

Function _____

[6]

[Turn over



- 7 (a) Diagrams **A** and **B** show the response of two seedlings to light from one direction over 48 hours.

Diagram A
(at start)

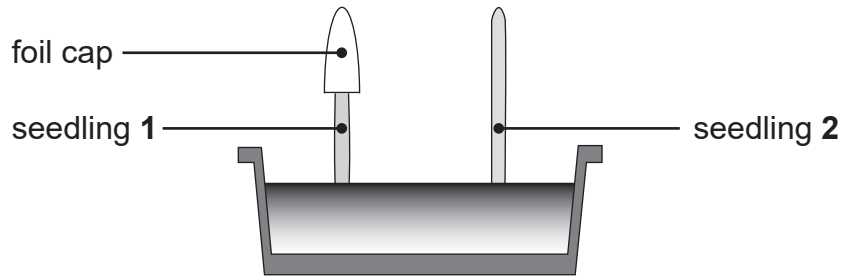
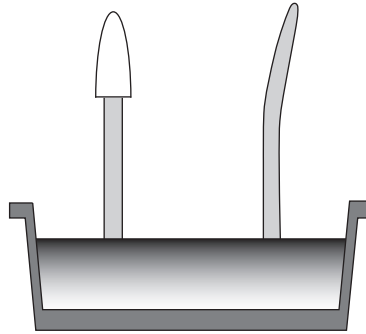


Diagram B
(after 48 hours)



Source: CCEA GCSE Biology Third Edition by J. Napier and D. Boyd (9781471892158) 2017 © Hodder and Stoughton Educational Limited. "Reproduced with permission of the Licensor through PLSclear."

Look at the diagrams.

- (i) Draw an arrow on **diagram B** to show the direction of the light shining on to the seedlings. [1]

Seedling **2** shows a response called phototropism.

- (ii) What is phototropism?

[2]



Phototropism is controlled by a plant hormone.

(iii) Explain how this plant hormone causes the response of seedling 2.

[3]

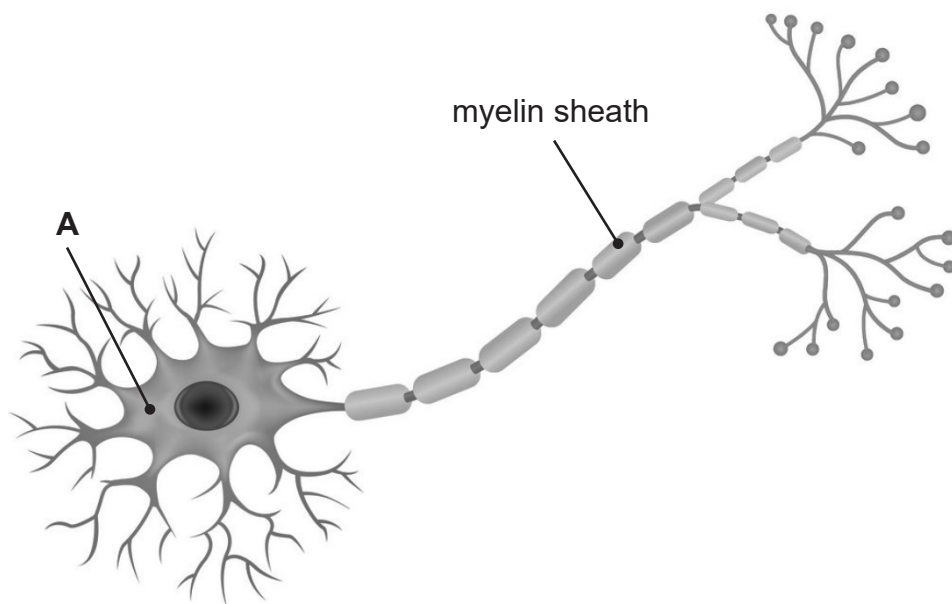
(b) Explain why seedling 1 did not show the same response as seedling 2.

[2]

[Turn over



8 (a) The diagram shows a neurone.



Source: © Getty Images

Look at the diagram.

(i) Name part A.

[1]

(ii) Give the function of the myelin sheath.

[1]



(iii) Give **one other** feature of the neurone shown in the diagram and explain how this adapts the neurone to its function.

Feature _____

Explanation _____

_____ [2]

(b) Dropping a very hot plate is an example of a reflex action.

(i) Describe **two** ways a reflex action differs from a voluntary action.

1. _____

2. _____

_____ [2]

(ii) Suggest how a reflex action is an advantage to a person.

_____ [1]

[Turn over



9 (a) What is diabetes?

[2]

(b) The table shows the number of young people of different age groups in the UK who had Type 1 and Type 2 diabetes in 2018.

Age group/ years	Number of young people with diabetes	
	Type 1	Type 2
0–4	1222	0
5–9	5836	17
10–14	12985	369
15–17	10510	558

Source: Adapted © Diabetes UK

Look at the table.

(i) Describe **two** trends in the number of young people with diabetes **from 0 to 17 years**.

Use **data** to support each trend.

1. _____

2. _____

[4]



(ii) Suggest **two** lifestyle changes which may be included as part of the treatment of Type 2 diabetes.

1. _____

2. _____

_____ [2]

[Turn over



10 (a) Farmers use slurry as a fertiliser.

Slurry is a mixture of faeces and urine from farm animals.

Table 1 shows the mineral content of three types of slurry.

Table 1

Type of slurry	Percentage of mineral content in slurry		
	Nitrogen	Phosphorus	Potassium
Chicken	7.00	0.31	0.23
Cow	2.32	0.37	0.21
Pig	6.05	0.44	0.11

Source: Principal Examiner

Look at **Table 1**.

(i) Which mineral shows the greatest variation in content between the three types of slurry?

[1]

(ii) Suggest why there is a large variation in the content of this mineral in the three types of slurry.

[1]



Table 2 shows the minerals needed by different plant crops.

Nitrogen is needed by plants for growth.

Table 2

Plant crop	Mass of mineral needed by crop/arbitrary units	
	Nitrogen	Phosphorus
Wheat	45	45
Maize	65	20
Rice	90	10

Source: Principal Examiner

Look at Tables 1 and 2.

(b) Which type of slurry would be best for growing rice?

Use evidence from both tables to support your answer.

[2]

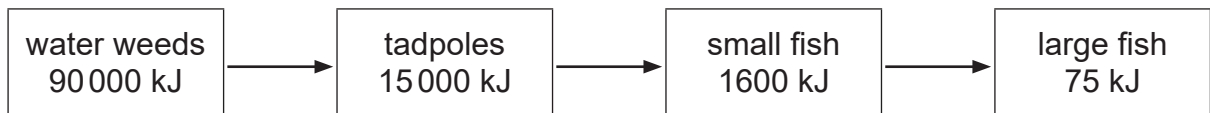
(c) Give the function of nitrogen in the growth of plants.

[1]

[Turn over



11 The diagram shows the transfer of energy along a food chain.



Look at the diagram.

(a) Give the trophic level of the tadpoles.

[1]

(b) Name the secondary consumer in this food chain.

[1]

(c) (i) Calculate the energy lost between the small fish and the large fish.

Show your working.

Energy lost _____ kJ [2]

(ii) Give **two** ways this energy is lost from the food chain.

1. _____

2. _____ [2]



(d) The percentage (%) efficiency of energy transfer between the water weeds and the tadpoles is calculated using the equation:

$$\% \text{ efficiency} = \frac{\text{energy transferred to the tadpoles}}{\text{total energy in the water weeds}} \times 100$$

(i) Calculate the % efficiency of the energy transfer from the water weeds to the tadpoles.

Give your answer to **one decimal place**.

Show your working.

% efficiency _____ [3]

(ii) Suggest why there is not another trophic level in this food chain.

_____ [1]

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Question Number	Marks
1	
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Examiner Number

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